



Partner Reported Opportunities (PROs)
For Reducing Methane Emissions

Install BASO® Valves

Compressors/Engines ☐
Dehydrators ☐
Pipelines ☐
Pneumatics/Controls ☐
Tanks ☐
Valves ☒
Wells ☐
Other ☐

Applicable sector(s):

☒ Production ☐ Processing ☐ Transmission and Distribution

Partners reporting this PRO: Philips Petroleum

Other related PROs: Lower Heater Treater Temperature, Install Flares, Install Electronic Flare Ignition Devices

Technology/Practice Overview

Description

Crude oil heater/treaters, gas dehydrators and gas heaters burn natural gas in air aspirated burners to provide processing heat. Strong wind gusts can blow out the pilot flame resulting in methane emissions. Gas leaks will persist until the pilot is re-lit.

Partners have reported using BASO valves to prevent this gas loss and methane emissions. BASO valves are snap-action valves activated by a thermocouple that senses the pilot flame temperature. When the flame is extinguished, the valve automatically shuts-off the fuel gas flow, preventing continued fuel loss and methane emissions. These valves are particularly effective at remote, manned production sites.

Principal Benefits

Reducing methane emissions was:

☒ The primary benefit of the project ☐ An associated benefit of the project

Operating Requirements

The maximum inlet pilot gas pressure allowed is ½ psig.

Applicability

This technology is applicable on all gas fired heaters.

Methane Savings

203 Mcf/yr

Costs

Capital Costs (including installation)

☒ <\$1,000 ☐ \$1,000-\$10,000 ☐ >\$10,000

Operating and Maintenance Costs
(Annual)

☒ <\$100 ☐ \$100-\$1,000 ☐ >\$1,000

Payback (Years)

☒ 0-1 ☐ 1-3 ☐ 3-10 ☐ >10

Methane Emission Reductions

The methane emission savings are calculated for a fuel gas rate that heats crude oil to 100 F°, assuming 75% efficiency. One partner reported methane savings of 222 Mcf/yr for a single installation.

Economic Analysis

Basis for Costs and Savings

Methane emissions savings of 203 Mcf/yr are estimated for installing a BASO valve on a 1000 bbl/day heater/treater that experiences a flameout period of 10 days annually.

Discussion

This technology has a quick payback. The economic benefits are complimented by improved safety. Each BASO valve costs less than \$100.